

LEVELS OF PSYCHOLOGICAL HEALTH RELATED TO THE  
CATTELL SIXTEEN PERSONALITY FACTOR TEST

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CATTELL SIXTEEN PERSONALITY FACTOR TEST

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TABLE OF CONTENTS

	Page
LIST OF TABLES . . . . .	iv
Chapter	
I. INTRODUCTION . . . . .	1
Problem	
Purpose of Study	
II. RELATED STUDIES . . . . .	4
Freedom of Communication Among Psychic Systems	
Autonomy of the Ego	
Correct Perception of Reality	
Social Adjustment	
Self Actualization	
Empirical Studies	
III. RESEARCH METHODS . . . . .	24
Part I: General Design of the Research	
Part II: Procedures and Measurements	
IV. RESULTS . . . . .	37
Introduction	
Application of the Specification	
Equation	
V. SUMMARY AND CONCLUSIONS . . . . .	51
Summary	
Conclusions	
APPENDIXES . . . . .	57
BIBLIOGRAPHY . . . . .	60

LIST OF TABLES

Table	Page
I. A Comparison of the Mean Sten Score Obtained by the "High" and the "Low" Criterion Groups on Each of the Cattell Sixteen Personality Factors . . . . .	38

## CHAPTER I

### INTRODUCTION

#### Problem

The goals of psychotherapy are not well defined. Certainly all therapists hope to alleviate symptoms and attack the nucleus of pathological conditions. Also a good deal of effort is devoted to helping individuals establish and maintain an existence independent of hospitals and clinics. Nevertheless, aside from expedient considerations such as these, little thought has been given to the ultimate aims of psychotherapy.

What mental attributes are necessary for individuals to function successfully in current society? What are the psychological characteristics that therapists should encourage in helping their patients regain mental health? As will become clear in the subsequent discussion, various professional circles emphasize different characteristics. Regretably, the greater portion of the ensuing theoretical controversy has been dealt with on a primarily abstract plane. An insufficient amount of attention has been devoted to establishing and validating operational definitions of mental health.

An operationally defined standard of mental health would serve several purposes: 1. It could serve as a major goal for psychotherapy. A well defined concept of psychological health

would provide a guide for therapeutic efforts. Rather than focusing their attention on the elimination of certain conditions, clinicians could devote more of their time and efforts to fostering those characteristics which would best equip patients for functioning in a healthy fashion outside the hospital. Psychotherapists and counselors would be provided with a distinct positive goal.

2. An operational definition of mental health could be used in evaluating the progress of therapy. The measuring instruments utilized to define mental health could be expected to reflect changes in mental health occurring as a result of therapeutic efforts. Also various therapeutic techniques could be compared according to their effectiveness in causing changes in an individual's score on the various measures.

3. An operational point of reference for mental health would also prove useful in screening those individuals in the general population whose mental health was weakened. Candidates for counseling might be selected with reference to how well their scores on the various tests approximated scores obtained by a group of mentally healthy persons. A tool which would discriminate psychologically unhealthy individuals from the healthy would find many applications.

#### Purpose of Study

The purpose of the present study is to develop an operationally defined standard of psychological health which will

be proposed as: 1, one of the goals of psychotherapy; 2, a device for aiding in the evaluation of psychotherapy, and 3, a tool for screening those individuals in the general population who are in need of counseling in order to maintain their mental health.

## CHAPTER II

### RELATED STUDIES

Psychological health is a multidimensional phenomenon. It involves highly developed efficient functioning in a number of areas. Most theoretical proposals related to describing mental health have included several psychological characteristics. Similarly, empirical studies have discovered psychologically healthy persons are characterized by a high level of functioning on a number of traits. It has become apparent to most researchers that a comprehensive description of mental health will require multiple criteria (24; 1; 33; 37; 44; 46).

The definition of mental health offered by the World Health Organization reflects the multidimensionality of the concept:

. . . a condition, subject to fluctuation due to biological and social factors, which enables the individual to achieve a satisfactory synthesis of his potentially conflicting instinctive drives, to form and maintain harmonious relations with others; to participate in constructive changes in his social and physical environment (20).

Evidently this organization considers several psychological characteristics to be important dimensions of mental health. Most theoretical formulations draw attention to one or several of these characteristics. As several theorists have emphasized the same or similar characteristics, it is



possible to detect some frequently recurring themes in the various conceptions of mental health.

#### Freedom of Communication Among Psychic Systems

For the psychoanalytically oriented, psychological health involves the maintenance of a dynamic equilibrium among internal forces. Earnest Jones (25) has stated the viewpoint of this school in a classical fashion. He asserts that a healthy psyche should ". . . provide channels from unconscious to conscious free enough to endure a permanent flow of energy from one level to another." The importance of undisturbed lines of communication between the systems of the psyche has also been emphasized by Gitelson (17).

The necessity for direction of psychical energy is important to Kubie (29). He conceives of a conscious pre-conscious alliance ruling the healthy psyche in a flexible manner in order to provide for 1) satiation of impulses while 2) maintaining a firm anchorage in reality. A balance is established between impulse gratification and the conditions imposed by reality.

This school of thought has drawn particular attention to the unhealthy aspects of complete ego domination. A balance should be established between impulse gratification and respect for reality. An extreme emphasis on reality functions can be unhealthy. Krapf (27) feels that a domination of the psyche by the ego is not conducive to establishing a healthy and harmonious relationship between instinctual needs and values

of the culture. In this sense, Kris' (28) ideas regarding a regression in the service of the ego should be considered a healthy function. Rapaport (40) offers an excellent summary of this viewpoint when he suggests that the healthy ego should maintain its autonomy from both external stimuli and demands of the id.

#### Autonomy of the Ego

Autonomy of the ego or the regulation of behavior by internal standards has been considered an important dimension of psychological health. The theorists with this orientation seem to view the social environment as a sinister force which encourages an irrational, unreasoned, and consequently unhealthy conformity to social norms. The healthy individual, according to Hartmann (22), has no fear of adverse social judgment and regulates his behavior in accordance with inner standards. The individual is seen as almost transcending--or certainly remaining independent--of his immediate environment. White (51) demonstrates a similar viewpoint when he speaks of an "ego identity free from transient influences." Similarly, the autonomous man described by Reisman (41) is capable of conforming to behavioral norms but free to choose whether to conform or not. His behavior is regulated by internal standards. This autonomy is made possible, according to Foote and Rottrell (11) by an especially clear conception of the self including a stable set of internal standards.

As Maslow (30) points out, an individual who is relatively independent of his social environment is able to obtain a great deal of satisfaction through inner channels and consequently remains more or less insulated from the blows and misfortunes of his environment. Allinsmith and Goethals (2) also feel that the ability to withstand adverse events without undue damage is an important characteristic of psychological health. Bonney (5) has described healthy people as those who have sufficient ego strength to prevent stress from becoming overwhelming.

Samler (45) and Kotchen (26) adopt a somewhat different viewpoint in their emphasis upon the willingness of psychologically healthy people to accept responsibility for their actions. Kotchen also draws attention to the efforts psychologically healthy people make to manipulate and shape their environment. An autonomous ego would seem to lead to active participation in the social environment and a willingness to accept individual responsibility for the consequence of one's actions.

#### Correct Perception of Reality

Many theorists point to the ability of psychologically healthy people to perceive reality in an especially correct or efficient manner (11; 7; 22). For Maslow (30) this involves an unusual capacity to detect the spurious, the fake, and the dishonest. Psychologically healthy people are able to perceive reality in a more objective, and, therefore, correct fashion

as a result of not being influenced by stereotypes, prejudices, and various wishes. Fromm (15) expresses a similar viewpoint when he speaks of grasping reality both inside and outside ourselves. This is accomplished by developing one's objectivity and reasoning power. Allport (3) has also focused attention on the value of objective self-introspection for psychological health. The ability to perceive reality correctly is the basis of Money-Kyrle's (35) distinction between neurotics and normals. Neurotics are cognitively wrong in their principles of reality; whereas, the perceptions of normals are more often in agreement with the facts of objective reality.

A willingness to accept negative and positive aspects of one's self has been distinguished as a criterion of mental health (38; 42). Maslow (30) has drawn attention to the number of people who are currently crippled by inappropriate feelings of guilt and unnecessary anxiety. Psychologically healthy people are able to accept themselves and their own nature. They can accept all things they have done and felt without rejecting or being threatened by any feelings, impulses, and desires. As Allport (3) indicates, a healthy self-concept must include an image of all important aspects of the individual. A mature or psychologically healthy person in Samler's (45) terms is able to accept and respect himself and, therefore, others.

### Social Adjustment

The importance of maintaining an effective and personally satisfying social adjustment has been emphasized by a number of workers (50; 46; 6). The neo-Freudians (23; 49; 11) in particular, have stressed the importance of competence in interpersonal relationships. Conrad (8) indicates that psychological health in this sense involves 1), positive affective relationships; 2), promoting the welfare of others, and 3), the ability to work with others for mutual benefit. Probably the most succinct statement emanating from this school comes from Karl Menninger (34) who defines mental health as "the adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness."

In his thoughts regarding the alienation of man from his fellow man, Rollo May (31) has drawn attention to interpersonal relations as a critical problem in contemporary society. Accordingly, it would appear that Glover (18) is correct in asserting that social adaptation provides the best reference point for studying mental health. The expert committee for mental health of the World Health Organization (9) has also suggested that the most important criterion of mental health is the capacity to establish harmonious interpersonal relationships.

Some writers (16; 13; 52) have indicated their interest in social adjustment as a dimension of psychological health by using somewhat different terms which emphasize deriving

personal satisfaction from institutionally defined roles. Psychological health in these terms involves the ability to gratify institutional demands through culturally defined channels with a minimum of conflict.

### Self Actualization

A number of eminent theorists (3; 10; 19; 30; 32; 47) have considered self actualization as the most important dimension of psychological health. Self actualization involves recognizing one's full potential by an unhampered utilization of all one's capacities. For many theorists self actualization is the motive force which drives one to work at the upper limits of one's ability. It is in this sense similar to Freud's life instincts which upset established equilibrium and move the individual toward more complex equilibrium (12). Bonney (5) sees this motivation as persistently leading to realization of one's maximum potential.

"Becoming" for Allport (3) involves a growth motive which maintains tension in the interest of distant goals of abstract ideals. Maslow (30) is suggesting a similar idea in his distinction between deficiency and growth motivation. Deficiency motivation includes the need for safety, belongingness, and love; whereas growth motivation goes beyond tension reduction to a need for utilizing all one's capacities. White (51) carries the idea somewhat further in suggesting that psychologically healthy individuals search for tension excitement and novel experiences. Experiences which test their competence

and provide for proving their efficiency are particularly satisfying. Psychologically healthy people in these terms are actively searching for experiences which will challenge their adequacy and demand their full participation.

Satisfaction is derived from experiences which demand the utilization of all one's capacities. This type of satisfaction is available to all individuals (42); however, in developing psychological health we must recognize that the motive to strive for complete growth and development is often obscured and misdirected. Counselors must, therefore, have faith in the capacity of the individual to grow and change in desirable directions (45). Their efforts should be directed to releasing the inherent energy for self actualization (42).

It is evident that one can view psychological health from several different standpoints. Depending on where attention is focused, psychological health would seem to involve 1), the ability and freedom to achieve instinctual gratification while maintaining respect for reality; 2), the capacity to regulate behavior by internal standards; 3), the ability to perceive reality correctly; 4), a willingness to accept one's own nature; 5), an effective and personally satisfying social adjustment; 6), actualization of all one's potentialities. The most comprehensive view is achieved by considering the concept as being multidimensional. Similarities can be noted among the characterological dimensions and a certain amount of redundancy is apparent; however, it is

clear that any generally acceptable standard of psychological health will have to include several traits. Most theoretical proposals have accordingly suggested more than one important dimension.

#### Empirical Studies

Also most research studies have discovered that several different traits must be employed to adequately describe psychological health. In fact, no research project has been successful in differentiating a unitary dimension of health. Nor has any study actually demonstrated the functional soundness of any concept of psychological health. The field is singularly lacking in experimental studies. It is possible to successfully discriminate the factors which contribute to mental health; however, the effectiveness of any given factor in explaining healthy behavior has not been tested by critical experiments.

The multiplicity of theoretical proposals in the mental health field and the remarkable absence of experimental studies are interrelated and can be explained by two factors. Each theoretical concept reflects the academic orientation and the value system of an individual. As M. Brewster Smith (48) points out, the choice of which criterion of mental health to emphasize involves a sometimes subtle value judgment regarding the desirability of certain behavior.



Different value systems have contributed to the overabundance of theoretical concepts. Also, psychological health is apparently not very amenable to scientific methodology. The behavioral manifestations of mental health necessarily occur in situations replete with uncontrolled variables. The development of control and experimental groups is complicated by ethical considerations. It would be difficult to perform experiments in this field even if appropriate independent and dependent variables could be agreed upon.

Some studies have successfully demonstrated the similarity among various viewpoints (33; 39). Others have offered support for a particular theory while adding new dimensions to an already complex concept.

Barron (4) has used the judgments of the staff of a research center to determine the personal soundness of a group of advanced male graduate students. Using various psychological instruments he found that the traits most often related to personal soundness were: 1), effectiveness and organization in working toward goals; 2), correct perception of reality; 3), ethical character; 4), interpersonal and intrapersonal adjustment. Most of these traits are recognizable as being part of some theoretical proposition.

Bonney (5) selected a group of psychologically healthy students by peer nominations and compared them with relatively unhealthy students selected in a similar fashion. According

to interview data and the Edwards Personal Preference Record, the healthy individuals were distinguished by their: 1), strong motivation to maintain self autonomy; 2), an effort to actualize their full potential and 3), an exceptionally high tolerance of psychologic stress. These findings lend empirical support to Maslow's theory of self actualization. The students also demonstrated a high capacity for self assertion in addition to interpersonal attractiveness.

It should be emphasized that Barron's and Bonney's subjects possessed capacities which were both quantitatively and qualitatively different from the normal or statistically average person. In a study which included an entire New England community, Epstein (9) found that the average individuals: 1), suffers from a marked degree of affectional and emotional constriction; 2), is ostracized by the community for free and open expression of negative feelings and 3), considers it imperative to unquestionably submit to authority personified by persons and mores of the group. He summarizes in the following manner:

Many of these subjects have made a surface adaptation to the demands placed upon them by the environment, but this cannot be equated with the positive achievement of emotional health (9).

In commenting on this state of affairs Hartmann notes that ". . . the nature of the environment may be such that a pathological development of the psyche offers a more satisfactory solution than would a normal one" (21).

An ethical question is inserted here when one is expected to consider whether submission to the environment is "more satisfactory" or healthy than active attempts to master the environment. As Jahoda (24) points out, many theorists have considered the latter as an important dimension of psychological health. The Barron, Bonney, and Epstein studies suggest that a psychological characteristic related to active manipulation of one's environment should effectively discriminate normal from psychologically healthy people. This characteristic could be related to a correct perception of reality, ego strength, the ability to gratify instincts, and self actualization.

Kotchen (26) has proposed several dimensions to account for the variation in psychological health observed between: 1), locked ward patients; 2), parole mental patients; 3), chronic physical patients and 4), man in the street and college students. Using questionnaire data he discovered that these groups differed consistently and in the expected direction on the following characteristics: 1), responsibility; 2), self affirmation; 3), courage (to be one's self); 4), transcendence of environment and time and 5), world view. As one progresses along the continuum of psychological health from locked ward patients to students, one finds individuals who are functioning at an increasingly higher level in these critical areas.

Monro (36) has used behavioral rating scales based on Cattell's trait syndromes to distinguish the statistically average person from hospitalized psychiatric patients. He found that the behavior of 208 American service men and 200 mental hospital patients varied along seven dimensions. The traits most frequently found in the normal and least frequently found in the hospital patients were: 1), realism and efficiency in dealing with environmental problems; 2), social ability and maturity; 3), conduct conforming to cultural standards; 4), capacity for rich emotional relationships; 5), capacity to accept experience without serious upset; 6), capacity for inquiry and creation; 7), capacity for adaption to circumstances. It is evident that statistically normal or average persons possess some of the characteristics proposed as important dimensions of psychological health. It is also notable that these average people apparently do not possess some of the traits discovered by Barron and Bonney to be characteristic of psychologically healthy persons. The possession of a relatively autonomous ego and the capacity for active manipulation of the environment are evidently unique characteristics of exceptionally healthy persons.

The ability to change the state of one's psychological health would seem to depend, in part, on a trait distinguished by Rogers (43). In an attempt to predict which juvenile delinquents would later achieve successful adjustment, Rogers, Keel, and McNeil (43) rated the group on: 1), heredity; 2),

family environment; 3), cultural background; 4), social and educational experience and 5), self insight. They found that ". . . the extent to which an individual faces and accepts himself and has a realistic view of himself and reality provides of the factors studied the best estimate of his future adjustment." As viewed from the standpoint of social adjustment, self insight would appear to be an important factor in psychological health.

In a comprehensive study of over one thousand college sophomores, Peck (38) has identified four characterological dimensions to account for observed variations in psychological health. Data from self report inventories and projective techniques were factor analyzed to yield the following traits:

1. Conscience-ruled stability vs. unprincipled impulsiveness;
2. Creatively intelligent autonomy vs. dull, unthinking dependence;
3. Loving affection vs. cold hostility;
4. Relaxed outgoing optimism vs. anxious, self-preoccupied pessimism.

Most of these facts fit within the general theoretical framework of mental health developed earlier in this review. In regard to factor one as stated above, the psychoanalytically orientated theorists would certainly point out that the maximum and the optimum are not synonymous. A reasonable amount of instinct gratification is desirable. Autocratic

control of all the psychic forces by the ego is not necessarily healthy. Factor two provides immediately apparent support for a factor related to autonomy of the ego. Factor three suggests a somewhat new dimension of psychological health related to the capacity for establishing affectional relationships. This factor should effectively discriminate the statistically average person from hospitalized persons. As with factor one, it seems that a maximal emotional response to all situations would not be equivalent to the most healthy state. Factor four is clearly related to competence in interpersonal relationships; however, to the extent that it represents a state of mind, it no doubt reflects the confidence a person has in his ability to deal effectively with his environment.

This study tends to support the individual theoretical propositions regarding mental health in addition to emphasizing the multidimensionality of the concept. It is notable that four traits were necessary to adequately describe the variations in mental health observed in a relatively select population. It is probable that these dimensions would have to be modified both qualitatively and quantitatively to describe a more heterogeneous population.

Peck (38) has drawn attention to some important differences in the three levels of psychological health. The low mental health students were characterized as having many intense, primitively self-centered desires. Strong repeated conflicts

regarding major aspects of their lives was consistently observed. Destructive interpersonal behavior was also typical of this group.

Over 80 per cent of Peck's sample were classified as average. These students were observed to be dependent social conformists without shape or purpose in their lives. Although these students represent by far the greatest proportion of the population, they cannot be considered psychologically healthy according to theoretical or empirical criteria.

Those of the high group were characterized as being strongly motivated to build self-realizing lives. They could accept negative feelings without conflict and demonstrated a fine capacity for foresight. They had diversified personalities which were developed on many sides. These highly healthy students were actively developing all their capacities; whereas, the average student was allowing many of his capacities to lie dormant. The motivation to develop all one's potentialities is apparently an important dimension along which the average person may be distinguished from the psychologically healthy person.

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## CHAPTER III

### RESEARCH METHODS

#### Part I: General Design of the Research

In planning this research attention was focused on the psychological health of a group of college students. Some theoretical criteria of mental health were developed from a review of the literature. The student group was asked to rate their peers on these criteria. These peer nominations were used as a basis for detecting those students whose psychological health was at the extremes of a continuum. In this fashion two criterion groups were established. Those students who received peer nominations indicating that they were at the extreme upper end of the continuum were selected for membership in the "high" or psychologically healthy criterion group. Those students who were considered by their peers to be relatively low on the continuum were placed in the "low" or relatively unhealthy criterion group.

The personality characteristics which distinguished the members of the "high" criterion group from members of the "low" criterion group were studied by administering the Cattell Sixteen Personality Factor Test to all the subjects. It was hypothesized that the members of the two criterion groups would score significantly differently on one or more of the

factors. Those factors on which the mean of the "high" group was significantly different from the mean of the "low" group were proposed as representing important dimensions of psychological health.

It was hoped that the Cattell Test could be used to predict the level of psychological health of the subjects. It seemed possible that the scores an individual obtained on certain important factors might be used as a basis for predicting his membership in either the "high" or the "low" criterion group. In order to accomplish the aim, the personality factors which accounted for major portions of the variance in scores obtained on the sixteen personality factors by members of the two criterion groups were assembled into a specification equation. The weighted score which each individual obtained on the three most important factors were summed to yield a criterion score. It was hoped that the criterion score obtained by members of the "high" group would all be above a certain empirically determined critical score level. Similarly it was hoped that the criterion scores obtained by members of the "low" group would be below this same score level.

In this fashion it would be possible to distinguish members of the "high" group from members of the "low" group by considering the scores obtained on only three of the sixteen factors. Conversely, it would be possible to predict the group membership of each individual in the study by knowing

his score on only three of the factors. This information would allow one to predict that those individuals whose criterion scores were above the previously determined critical score level were members of the "high" or psychologically healthy criterion group.

It was hoped that the specification equation developed in the current study could be used to screen individuals in the general population for psychological health. Accordingly, the validity of the specification equation was tested by administering the Sixteen Personality Factor Test to a group whose psychological health was independently determined. It was hypothesized that these students, who were assumed to be psychologically healthy, would score highly on the three important factors and obtain a criterion score above the critical score level established in the current study.

#### Part II: Procedures and Measurements

A tentative standard of psychological health was developed from existing information. A person with high psychological health is one who:

- (a) typically is energetic and characterized by feelings of well being or happiness;
- (b) typically makes friends easily, enjoys the company of others, and is well liked by most others;
- (c) typically has goals and works efficiently toward achieving those goals;

(d) typically is not unduly critical of other nor of self, and

(e) typically guides his or her behavior by sound judgment, is able to make constructive decisions and to act upon these decisions.

These standards were proposed as criteria of psychological health and included in the direction given to the subjects of the study.

The subjects used in the current study were selected by their peers from a population of students (N=365) enrolled in sophomore, junior, and senior psychology courses at North Texas State University. Each individual in the population was provided with a mimeographed register which alphabetically listed the names of all persons in the population. Each individual was also given a sheet of instructions (see Appendix I) which: 1), afforded a general orientation to the purposes of the study; 2), enumerated the characteristics of psychological health mentioned above and 3), requested that the individual choose five persons from the register with whom he was sufficiently well acquainted to make judgments regarding their psychological health.

Each student in the population was asked to objectify his estimate of the psychological health of the five persons he chose on a seven-point rating scale. Also, eight members of the psychology faculty were asked to choose and rate five students in the population. The rating scale consisted of

a continuum of psychological health ranging from "exceptionally low" through "average" to "exceptionally high."

Name of person being rated \_\_\_\_\_

1	2	3	4	5	6	7
one of few poorest	well be- low average	below average	average	above average	well above average	one of the few best
_____	_____	_____	_____	_____	_____	_____

This rating scale was reproduced five times on a single sheet of paper (see Appendix II). Above each scale there was a blank for the name of the person being rated. The individuals were specifically instructed to be candid and realistic in their judgments and, if possible, to choose for rating persons who would fall at varying points along the scale continuum.

The data obtained from the rating scales provided the information used in selecting two criterion groups. Each individual received a score based on the number of times he was rated in each division of the scale. This score was used to determine eligibility for membership in the "high" (psychologically healthy) or "low" (relatively unhealthy) criterion groups. Accordingly, a tally sheet was constructed which included the names of all persons in the population and also provided a space for recording the number of times an individual was rated under each division of the psychological health scale. Each individual's score was determined by assigning point values to the various divisions of the rating



scale. The middle value on the seven-point scale would correspond to a rating of "average" psychological health.

"Average" was assigned a score value of zero. A rating of "above average" received 1+ points, a rating of "well above average" 2+ points, and a rating of "one of the few best" received 3+ points. A rating of "below average" received 1- points, a rating of "well below average" 2- points, and a rating of "one of the lowest" received 3- points. A total score was compiled for each individual in the population by adding the number of points received each time he was chosen for rating.

A student was placed in the criterion group considered "high" with regard to psychological health if he received at least 10+ points. A student was placed in the criterion group considered "low" in psychological health if he received a score of 6- or more negative. In this manner thirty-five students were selected for the "high" criterion group and thirty-two other students were selected for the "low" criterion group. The scores of the people selected for the "high" group ranged from 10-28 with a mean of 13.8. The scores of the people selected for the "low" criterion group ranged from -6 to -12 with a mean of -8.

As mentioned above, faculty nominations were used to supplement the data obtained from students rating each other. If three of the eight faculty raters gave a student a "high" nomination, the student was placed in the "high" criterion

group. Similarly, those students who were given a "low" rating by three of eight faculty members were placed in the "low" criterion group. Generally, the faculty and student ratings were in good agreement; however, seven students who did not receive 10+ points from fellow students were placed in the "high" group as a result of faculty nominations. None of these students added to the "high" group by faculty nominations received any "below average" ratings from their peers. Ten students were placed in the "low" group by faculty nominations although they did not receive -6 points from their peers. None of these students placed in the "low" group received "above average" ratings by their peers. The "high" criterion group was finally composed of forty-two students considered by their peers and/or faculty members to be highly healthy from a psychological standpoint. The "low" criterion group was composed of forty-two students who were considered by their peers and/or faculty members to be "low" on a continuum of psychological health. These groups consist of approximately the upper and lower 12 per cent of the population considered in the current study.

The process of discriminating two criterion groups from a population of students has been described above. The criterion groups were empirically defined and proposed as representing groups of individuals whose characteristics placed them at opposite ends of a continuum of psychological health.

The next task involved describing the personality characteristics of the two groups.

The Cattell Sixteen Personality Factor Test (1) was chosen for describing the personality characteristics of the criterion groups. This questionnaire self report inventory provides a sufficiently broad range of descriptive categories to account for a complex criterion (4). It may be considered methodologically superior to other instruments of its class. The questionnaire factors were built upon factors first discovered in behavior ratings. The factor structure of each item is determined and there is no overlap of questionnaire items among different factors. Fisher (2), in his review of the Sixteen Personality Factor Test, states that "these (factors) are the mathematically isolated and clinically described minimum factors necessary to account for the various ratings in real life behavior situations, objective tests and clinical and social performance."

The Sixteen Personality Factor Test was administered to the members of the "high" and "low" criterion groups. The raw score which each individual obtained on each of the sixteen factors was tabulated. These raw scores were converted to standard scores by utilizing tables published with the test (1). The standard scores used in the tables are in sten units. Sten scores are similar to stanine scores except that ten units are used to cover the population range from  $-2\frac{1}{2}$  sigma to  $+2\frac{1}{2}$  sigma instead of the more familiar nine units.

The personality profile most typical of each criterion group was determined in the following fashion. Each individual's personality was characterized by the set of sten scores he obtained on the sixteen personality factors. The various sten scores which members of the "high" group obtained on each factor were averaged. Similarly, it was possible to calculate the sten score which represented the average performance of the "low" group on any given factor. In this manner, the mean sten score obtained by the "high" group on a given factor was compared with the mean obtained on the same factor by the "low" group. The factors on which the mean of the "high" group was significantly different from the mean of the "low" group were proposed as representing traits which distinguished psychologically healthy persons from relatively unhealthy persons.

The Institute for Personality and Ability Testing has published a substantial amount of information indicating how the Sixteen Personality Factor Test can be used for predicting an individual's standing relative to a given criterion (1). The factors which account for a significant portion of the criterion variance are used in constructing a specification equation. The term specification equation refers to the fact that the performance of an individual or a group can be "specified" or operationally defined in terms of a combination of scores obtained on the most significant factors. Some factors will be more important in describing the criterion

than others; consequently, the specification equation provides for the prediction of criterion performance by a combination of weighted test factors. The score which an individual obtains on each of the critical factors is multiplied by the weight assigned to the factor. The several products derived in this manner are summed. Each individual thereby receives a criterion score which can be compared with scores calculated in the same fashion for members of a criterion group. A specification equation takes the following form:

$$X_0 = X_1B_1 + X_2B_2 + \dots + X_nB_n$$

where  $X_0$  = criterion score or dependent variable

$X_1$  = score on factor 1 or independent variable 1

$B_1$  = optimum weight assigned to factor 1 in order to predict  $X_0$ .

In the current study it was desirable to predict membership in one of two groups by scores obtained on the sixteen personality factors. A dichotomous criterion was to be predicted by sixteen independent variables. The problem involved determining the optimal weights to be assigned to the various factors in order to provide a maximum difference between the criterion scores obtained by the high and low groups. The best method for determining the optimal weight for the factors is to compute the beta weights which would be appropriate in a multiple regression equation for the data (3; 5). Accordingly, the product moment correlations among the sixteen independent variables were calculated. The point biserial

correlation between each independent variable and the dichotomous dependent variable was also computed. The problem involved determining optimum relative weights rather than fitting a regression plane so the point of interception of the regression equation was not calculated and the following formula (3) was used in converting beta weights to B weights:

$$B =$$

Only those factors whose beta weights indicated a contribution to the criterion variance above the 2.0 level of significance were utilized in the specification equation. The specification equation determined by data of the current study took the following form:

$$X_0 = +.06X_A + .05X_M - .04X_{Q_2}$$

where  $X_0$  = a criterion score

$X_A$ ,  $X_M$ ,  $X_{Q_2}$  = the sten score which an individual obtained on factors A, M, and  $Q_2$  respectively.

The numerical values indicate the B weight which was assigned to the various factors.

Using the specification equation, a criterion score was computed for each member of both the "high" and "low" groups. The criterion score of each individual was calculated by multiplying the sten score obtained in factors A, M, and  $Q_2$  by the appropriate factor weights and summing the products. It was hypothesized that the criterion scores of the "high" group would be sufficiently different from the "low" group

to establish a discriminate function. It was hoped that most of the scores of the "low" group would fall below an empirically determined critical score level; whereas, most of the scores of the "high" group would fall above this score level.

The specification equation was cross-validated with a group of students whose psychological health was determined independently. The Sixteen Personality Factor Test was administered to a group of nineteen students nominated by the faculty of the various departments of the University for Who's Who in American Colleges and Universities. The criteria of this nomination involved scholastic achievement and participation in extra-curricular activities. It was assumed that these students occupied an extremely high position on the continuum of psychological health. It was hypothesized that the criterion scores obtained by most of the Who's Who students would be above the score-level established in the current study for discriminating between the "high" and "low" groups.

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## CHAPTER IV

### RESULTS

#### Introduction

It will be recalled that the present study involved three hypotheses:

1. The mean score of the "high" group will be significantly different from the mean score of the "low" group on one or more of the personality factors measured by the Cattell Sixteen Personality Factor Test.

2. The specification equation developed from the current data will discriminate members of the "high" group from members of the "low" group.

3. The specification equation will correctly predict the level of psychological health of an independent group.

#### The Dimensions of Psychological Health

Table I reveals that Hypothesis One was confirmed. The mean score of the "high" group was significantly different from the mean score of the "low" group on factors A and N.

On factor A the mean of the "high" or psychologically healthy group was significantly greater than the mean of the "low" group. The "high" group demonstrated a mean sten score of 6.45; whereas, the mean for the "low" or relatively unhealthy group was 5.28. This difference in means for the two groups was significant at the .01 level.

TABLE I

A COMPARISON OF THE MEAN STEN SCORE OBTAINED BY THE  
 "HIGH" AND THE "LOW" CRITERION GROUPS ON EACH  
 OF THE CATTELL SIXTEEN PERSONALITY FACTORS

Factor	Mean Sten Score		Level of Significance of the Difference Between the Means
	"High" Group	"Low" Group	
A	6.4523	5.2857	.01
B	6.4761	6.3095	.1
C	5.4523	5.4285	.1
E	6.8571	6.3333	.1
F	5.8095	5.4285	.1
G	4.5952	4.2380	.1
H	6.1666	5.6428	.1
I	6.2142	6.0714	.1
L	4.8809	4.9523	.1
M	6.2380	5.3511	.1
N	5.8095	4.8333	.05
O	5.2380	4.5952	.1
Q <sub>1</sub>	6.2857	6.1428	.1
Q <sub>2</sub>	5.5476	5.9761	.1
Q <sub>3</sub>	5.1428	4.6904	.1
Q <sub>4</sub>	5.2380	5.3095	.1

In a discussion regarding the psychological meaning of the sixteen personality factors, Cattell (1) has indicated that factor A is concerned with social relationships. People who score high on factor A are seen as "good natured," "ready to cooperate," "attentive to people," "trustful," "adaptable," and "warm hearted"; whereas, people who score low on the factor are viewed as being "aggressive," "grasping," "aloof," "suspicious," "rigid," and "cold." Cattell states that:

. . . in questionnaire responses the person who scores highly on A expresses marked preference for occupations dealing with people, enjoys social recognition and is generally willing to go along with expediency; while the person who scores low on A likes things or words (particularly material things), working alone, intellectual companionship, and avoidance of compromise.

There is evidence that collections (of people who score high on factor A) more readily form active groups and there is experimental proof that they are more generous in personality relationships, less afraid of criticism, better able to remember names of people, but probably less dependable in precision work and in exactly meeting obligations (1).

There is evidently a substantial difference in the manner in which members of the two groups approach social relationships. It seems that members of the "high" group were oriented to establishing effective rapport with their fellows. They would probably be willing to compromise with their environment in order to maintain personally rewarding affectional relationships. Members of the "low" group are apparently more reserved and less dependent upon social relationships. Occupationally, teachers and salesmen score high on factor A; whereas, house electricians and research physicists score in the lower ranges (1).

The means for the two groups were also significantly different on factor N. The "high" group received a mean sten score of 5.81; whereas, the mean sten score for the "low" group was 4.83. This difference in means is significant at the .05 level of confidence.

Factor N is related to competence in interpersonal relationships. According to Cattell (1) people who score high on factor N may be considered "polished, socially alert," "ambitious, possibly insecure," "insightful regarding self," and "insightful regarding others." Persons who score further down the continuum on factor N are viewed as "socially clumsy," "content with what comes," "lacking self insight" and "unskilled in analyzing motives." Cattell (1) indicates that people who score highly on factor N are "ingenuous, good at clinical diagnosis, flexible in viewpoint, alert to manners, and social obligations, and to the social reactions of others."

Cattell has stated:

The pattern represents some form of intellectual-educational development, not to be confused with intelligence, though it correlates with both intelligence and dominance.

. . . although this dimension thus looks like a socially acquired pattern of skills, there is curious initial evidence in the clinical field that it is associated with a generalized mental alertness, health and efficiency, for it is a factor tending to be low in both the major forms of psychosis and in neuroses. Occupationally high scores on N are negatively related with teaching success (1).

In the current study, neither group scored particularly high on factor N. The mean sten score of the "high" group

(5.81) approximated the population average (5.5) as determined in standardization studies of the Sixteen Personality Factor Test. Significantly different means between the "high" and "low" groups were achieved as the result of a sten score mean of 4.83 for the "low" group. It would seem that the "high" group was not particularly (in Cattell's terms) "sophisticated and polished." The "low" group might, however, be characterized as "simple and unpretentious." Cattell (1) feels that people who score low on factor N do have a "more natural warmth and liking for people." In this sense the "lows" could be viewed as more genuine although less successful in social relationships than the more efficient and competent "highs." Possibly the simple and unpretentious manners of the "lows" are inappropriate for many social settings. It should be recalled that the "highs" were able to derive considerable satisfaction from interpersonal relationships. This is evidently accomplished by the "highs" in a refined fashion by establishing a balance or happy medium between naivete and ultra-sophistication. Conversely, the "lows" demonstrate a relatively poorly developed capacity for functioning effectively in their social environment. Their personal satisfaction is found in intellectual companionship and in the manipulation of material things.

The current study has provided evidence for two dimensions of psychological health. Both are the factors (A and N) on which the "high" and "low" groups demonstrated significantly

different means are related to social behavior. The data indicate that competence in interpersonal relationships and the ability to derive satisfaction from social interaction constitute important dimensions of psychological health.

The data of the current study suggest some additional dimensions which might profitably be included in subsequent formulations regarding psychological health. The "high" and "low" groups tended to show significantly different means in factors M and Q<sub>2</sub>. Factors M and Q<sub>2</sub> also appear in the specification equation, so they would seem to warrant further consideration.

Table I indicates that the mean score of the "high" group is somewhat greater than the mean score of the "low" group on factor M. The mean sten score of the "high" group was 6.24; whereas, the mean sten score of the "low" group was 5.36. This difference is significant at the .1 level.

Factor M is related to autonomous thinking and imagination. According to Cattell (1), persons who score highly on factor M may be characterized as "unconventional," "interested in art, theory, basic beliefs," "imaginative," and "generally cheerful" but given to "occasional spells of hysterical giving up." Persons who score relatively low on factor M are viewed by Cattell (1) as "conventional," lacking in "spontaneous creativity," with "interests narrowed to immediate issues" and occasionally "concerned or worried, but very steady." Cattell (1) feels that persons who score high on factor M

frequently indulge in "internally autonomous thinking," whereas persons who score lower on factor M tends to focus their thoughts on "practical concerns." Alternative titles such as "Mary-vs-Martha" have been used to catch the quality of this dimension. Occupationally, high M has been found (1) to distinguish the more creative researchers and artists from administrators and teachers of the same eminence.

The high M individual is evidently capable of being unconventional and is concerned with basic--sometimes idealistic--principles; whereas, the low M individual is oriented toward conventionality and is alert to practical needs. The factor receives theoretical support from proposals related to self-actualization and autonomy of the ego. It will, no doubt, warrant further investigation in studies concerned with developing a comprehensive description of psychological health.

Factor  $Q_2$  is an important dimension of psychological health. Table I indicates that the mean of the "high" group (5.5) is not significantly different from the mean of the "low" group (5.9). It can be observed, however, that the mean sten score of the "low" group is very slightly higher than the mean sten score of the "high" group. The scores on factor  $Q_2$  are distributed in a manner which yields a correlation of  $-.10$  between high scores and membership in the "high" group. This correlation does not adequately reflect the importance of factor  $Q_2$ , for statistical procedures indicate that factor  $Q_2$  accounts for a significant amount of the criterion variance.

Its contribution is significant at the .05 level. Factor  $Q_2$  is included in the specification equation. It has a negative B weight which reflects the negative correlation between high scores on the factor and membership in the high group.

Cattell (1) indicates "that factor  $Q_2$  is important for describing a dimension of introversion." The dimension ranges from "group dependency" at the low end to "self sufficiency" at the high end. People who score high on factor  $Q_2$  are described as "resolute and accustomed to making their own decisions." People who score low on factor  $Q_2$  are willing to go along with the group, "definitely value social approval" and are "conventional and fashionable."

The relatively lower sten scores which the "high" group made on factor  $Q_2$  suggest that the members of this group are group dependent and placed considerable value on social approval. This would tend to confirm earlier findings regarding the proficiency of the "highs" in dealing with group situations and their ability to derive satisfaction from interpersonal relationships. The "highs" evidently seek groups and are particularly competent in social situations. The "lows" are apparently less group dependent and more inclined to seek satisfaction within themselves in the manipulation of material objects.



### Application of the Specification Equation

Hypothesis Two was also confirmed. It will be recalled that a specification equation was developed for the purpose of predicting group membership on the basis of sten scores obtained on three important factors. A criterion score was calculated for each individual by multiplying the sten score received on factors A, N, and Q<sub>2</sub> by the B weight assigned to each of these factors. The three products thereby determined were summed to yield the criterion score for a given subject. The criterion scores for members of the "low" group ranged from .044 to .898 with a mean of .422. The criterion scores for members of the "high" group ranged from .232 to 1.064 with a mean of .568.

A process of trial and error revealed that if .500 was selected as a cutting score most of the members of the "high" group would achieve criterion scores above this level; whereas, most of the members of the "low" group would receive a criterion score below this critical score level. Twenty-nine of the forty-two members (69 per cent) of the "high" group received criterion scores above .500. The specification equation successfully discriminated members of the "low" group from members of the "high" group. It was possible to correctly predict the group membership of 70 per cent of the subjects on the basis of the sten score received on factors A, N, and Q<sub>2</sub>.

It is evident that the specification equation produced a number of false positives. Twelve persons identified as

"high" on the basis of a criterion score above .500 were in fact members of the "low" group. Thirteen persons identified as "low" by the specification equation approach (criterion score less than .500) were actually members of the "high" group. Using the specification equation method there were 28 per cent positives in the "high" group and 31 per cent false positives in the "low" group. The specification equation was incorrect for 30 per cent of the predictions.

Some of the subjects who were placed in the "high" group by peer nominations evidently possessed characteristics typical of persons in the "low" group. Also, some of the subjects who were selected by their peers for membership in the "low" group apparently possessed a constellation of traits more typical of members of the "high" group.

The false positives reflect the inability of peers to agree upon the interpretation that should be given to a particular constellation of traits. Some persons in the peer group might consider a given constellation of traits to be psychologically healthy. Other peers might interpret the same constellation of traits to be relatively unhealthy. In addition, peer judgment is necessarily based on behavioral observation or inferences regarding the motivation related to the behavior. It is not surprising that the way a certain individual's behavior is perceived by a peer group might differ from the individual's report regarding the same behavior. In this sense, self report inventories and peer judgments may be

expected to yield sometimes conflicting information. This evidently occurred in 30 per cent of the observations made in the current study.

It seems probable that the incorrect predictions also reflect the multidimensionality and complexity of the psychological health concept. A high score on one or several traits may be inappropriate for comprehensively describing a complex phenomenon. The interaction among several traits may provide an important additional dimension. In this case, the interaction would sometimes cause a given trait to contribute significantly to psychological health. On other occasions when a different set of circumstances prevailed, the interaction might result in the same trait making a distinct contribution to inefficient functioning. Rather than focusing attention on single traits, it is important to evaluate the total person.

It seemed worthwhile to consider broader application of a specification equation based on the sixteen personality factors. The specification equation developed in the current study might profitably be used for screening a student population with regard to psychological health. The data collected indicate that a student could be considered psychologically healthy if his appropriately weighted sten scores on factors A, N, and Q<sub>2</sub> of the sixteen personality factors yielded a criterion score above .500.

Accordingly, the Sixteen Personality Factor Test was administered to nineteen students who had been nominated by their professors for Who's Who in American Colleges and Universities. These students were nominated during the early part of the Spring (1964) semester on the basis of academic excellence and participation in extracurricular activities. The Who's Who students were assumed to be "psychologically healthy." It was hoped that most of the Who's Who students would achieve a criterion score above .500.

Hypothesis Three was not confirmed. The criterion scores of the Who's Who group ranged from .01 to .79 with a mean of .44. Only seven of the Who's Who students (37 per cent) received a criterion score above .500.

The trait structure of most of the Who's Who students was apparently unrelated to the trait structure observed in members of the current study's "high" group. The Who's Who students could not be identified by sten scores on factors A, N, and Q<sub>2</sub> of the sixteen personality factors. The factors which best described the personality traits of members of the "high" group did not adequately describe the personality of Who's Who students.

As 63 per cent of the Who's Who students received criterion scores below .500, it would appear that the trait structure of Who's Who students approximated the trait structure observed in the members of the current study's "low"

group. The Who's Who students did not score consistently on factors A, N, and Q<sub>2</sub>. These three factors simply did not distinguish the Who's Who students from the general population.

The failure of the specification equation to correctly identify members of the Who's Who group as psychologically healthy is a reflection of the different criteria used for determining health. The criteria used for selecting Who's Who students--academic excellence and participation in extra-curricular activities--were not immediately related to the criteria of psychological health used in the current study. Also, judgments regarding the eligibility for membership in the Who's Who group were made exclusively by faculty; whereas, peer judgment and faculty judgment were combined in the current study to determine respective group memberships.

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## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Summary

The current study has attempted to operationally define some important dimensions of psychological health. Related studies have indicated that psychological health is a multi-dimensional phenomenon best defined by multiple criteria.

Accordingly, five criteria of psychological health were selected for study. It was proposed that psychologically healthy persons are (a) typically energetic and characterized by feelings of well being; (b) able to make friends easily and were liked by most other persons; (c) working efficiently toward achieving goals; (d) not unduly critical of others or of self; and (e) able to guide their behavior by sound judgment.

Subjects were selected who seemed to manifest most of these criteria. These subjects were compared with another group of subjects who seemed to possess relatively few of the characteristics defined by the criteria of psychological health. This selection process was accomplished by a population of students who were asked to judge which of their peers possessed psychological characteristics outlined in the criteria. These peer nominations were used to discriminate

students who occupied the extremes of the continuum of psychological health. Faculty nominations were also utilized for this purpose.

The Cattell Sixteen Personality Factor Test was used to operationally define the psychological dimensions which best described the two groups. The Cattell factors on which the psychologically healthy subjects scored significantly different from the relatively unhealthy group were proposed as representing important dimensions of psychological health.

The psychologically healthy group scored significantly higher than the relatively unhealthy group on factors A and N of the Sixteen Personality Factor Test. Both of these factors are related to social behavior. Cattell (1) has indicated that individuals who obtain high scores on factors A and N are "good natured," "ready to cooperate," "attentive to people," "trustful," and "adaptable." They are also "polished, socially alert," "emotionally disciplined," "insightful regarding self and others," and "ambitious." Individuals who score relatively low on factors A and N are characterized as "critical," "obstructive," "cool," "aloof," "suspicious," and "rigid," in addition to being "socially clumsy," "lacking in self insight," "unskilled in analyzing motives," and "content with what comes" while trusting accepted values. The members of the "high" or psychologically healthy group were apparently oriented toward establishing effective rapport with their fellows. They were quite skillful in accomplishing this goal;



however, they were also capable of being conventional and spontaneous. The members of the "low" or relatively unhealthy group were evidently more reserved in social situations, possibly due to their lack of ability to function effectively in this area. They demonstrated little insight regarding themselves or others. Also, the "lows" seemed inclined to seek satisfaction in the manipulation of things rather than ideas.

A "specification equation" was developed from the current data for the purpose of estimating the level of a person's psychological health. The scores which a person obtained on the statistically most important Cattell Factors were combined to yield a prediction regarding whether the person was a member of the "high" or the "low" group. The level of psychological health of 70 per cent of the subjects was correctly predicted by considering scores obtained on only three (A, N, and Q<sub>2</sub>) of the Cattell Factors.

The specification equation failed, however, to predict the level of psychological health of a group of students nominated on the basis of academic excellence and participation in extracurricular activities for membership in Who's Who in American Colleges and Universities. Although these students were assumed to be psychologically healthy, the specification equation did not differentiate them from the general population. The application of the specification equation was quite specific in that it was only capable of identifying those students

who possessed psychological characteristics similar to those considered as psychologically healthy in the current study.

### Conclusions

Peer and faculty judgments can be used to discriminate groups of students who occupy opposite ends of a continuum of psychological health. This can be accomplished by using theoretical criteria to define the poles of the continuum and asking a peer group to make judgments regarding the extent to which their fellows possess the characteristics defined by the criteria. The most reliable and valid peer judgments will be based on criteria related to immediately observable behavior.

An operational definition of psychological health can be established by using the Cattell Sixteen Personality Factor Test to describe the characteristics which distinguish psychologically healthy subjects from relatively unhealthy subjects. Psychological health defined in this fashion would involve high scores on factors A and N of the Cattell Sixteen Personality Factor Test. These factors indicate that competency in interpersonal relationships and the ability to derive satisfaction from social interaction represent important dimensions of psychological health. It is also evident that psychologically healthy persons are capable of clearly perceiving their environment and are inclined to deal with abstract ideas. Relatively unhealthy persons do not deal very effectively

with their social environment and prefer to focus their attention on the manipulation of material things.

It is possible to identify psychologically healthy persons by using a specification equation based on only three of the Cattell Sixteen Personality Factors. In the current study, the level of psychological health of 70 per cent of the subjects was correctly predicted by considering only those scores obtained on factors A, N, and Q<sub>2</sub>. It seems possible that future refinement of a specification equation based on the Cattell Sixteen Personality Factor Test will result in the development of an instrument capable of effectively screening students with regard to psychological health.

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## APPENDIX I

### RATING SCALE INSTRUCTIONS

You are being asked to help in developing a method of studying psychologically healthy people. Most people, we know are psychologically healthy. We call such people normal, well-adjusted, or mature. All these words mean essentially the same thing. We also know that people vary with respect to how healthy they are psychologically. Most of us fall within the average or typical range of health. Some of us are above average in psychological health and some are below average. Our present interest is in learning to what extent people agree on the level of psychological health of people they know fairly well. When we think of how healthy a particular person is, we generally have in mind certain kinds of information. For example, a person with high psychological health is one who (a) typically is energetic and characterized by feelings of well-being or happiness; (b) typically makes friends easily, enjoys the company of others, and is well liked by most others; (c) typically has goals and works efficiently toward achieving those goals; (d) typically is not unduly critical of others nor of self, and (e) typically guides his or her behavior by sound judgment, is able to make constructive decisions and to act upon these decisions.

It seems clear that all of these statements would be essentially true of someone with a high degree of psychological

health. To a lesser degree they would be true of a person with about average psychological health and to an even smaller degree of persons with below average health.

On a separate page given you there are five copies of a seven-point scale of psychological health ranging from exceptionally high to exceptionally low. You are asked to look at the list of names given to you and to select the names of five persons whom you are to rate on the scales given on the separate page. It will be best for this study if you will choose persons whom you know quite well regardless of whether or not you are friendly with them, and it will also help if you will choose persons whom you would rate at widely varying points on the scale continuum. If you cannot select five, please rate less than this number, even if it is only one or two.

You need not sign your name. You are to make a check (X) on the short line below the number on the scale which best describes your over-all assessment of each person you rate. The value of these data will depend on how candid and realistic each rater can be. In no instance can these ratings either help or injure any student. This study is being conducted for research purposes only and consequently the results will not be made known to any individual, except eventually as a group summary report.

APPENDIX II  
RATING SCALES

1. Name of person being rated \_\_\_\_\_

1	/	2	/	3	/	4	/	5	/	6	/	7
one of few poorest		well be- low average		below average		average		above average		well above average		one of the few best

\_\_\_\_\_

2. Name of person being rated \_\_\_\_\_

1	/	2	/	3	/	4	/	5	/	6	/	7
one of few poorest		well be- low average		below average		average		above average		well above average		one of the few best

\_\_\_\_\_

3. Name of person being rated \_\_\_\_\_

1	/	2	/	3	/	4	/	5	/	6	/	7
one of few poorest		well be- low average		below average		average		above average		well above average		one of the few best

\_\_\_\_\_

4. Name of person being rated \_\_\_\_\_

1	/	2	/	3	/	4	/	5	/	6	/	7
one of few poorest		well be- low average		below average		average		above average		well above average		one of the few best

\_\_\_\_\_

5. Name of person being rated \_\_\_\_\_

1	/	2	/	3	/	4	/	5	/	6	/	7
one of few poorest		well be- low average		below average		average		above average		well above average		one of the few best

\_\_\_\_\_

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